DOCUMENT RESUME

ED 458 854 HE 034 503

AUTHOR	Strauss, Linda C.; Volkwein, J. Fredericks
TITLE	Predictors of Student Commitment at Two-Year and Four-Year Institutions.
PUB DATE	2001-11-00
NOTE	19p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (26th, Richmond, VA, November 15-18, 2001).
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Persistence; *College Freshmen; Higher Education; Institutional Characteristics; Multivariate Analysis; Prediction; *Student Attitudes; Two Year Colleges
IDENTIFIERS	*Commitment

ABSTRACT

This study examined the predictors of institutional commitment of first-year students at 28 two-year public and 23 four-year public institutions. Institutional commitment is a precursor or predictor of student persistence behavior. For this study, institutional commitment is defined as the student's overall satisfaction, sense of belonging, impression of educational quality, and willingness to attend the institution again. There were 8,217 student responses (2,499 from first-year students at four-year institutions and 5,718 students at two-year institutions). A multivariate analysis was conducted using hierarchical linear modeling. Results indicate that multiple student-level variables influence institutional commitment. The most important are the measures of academic integration, followed by the measures of social integration. Academic growth and development, financial attitudes, and financial aid were significant predictors of student institutional commitment. Precollege characteristics of age, ethnicity, and marital status were also significant predictors of commitment. After controlling for all other variables, it was found that students at two-year colleges have a slightly higher institutional commitment than students at four-year colleges. The difference was statistically significant, but actually quite small. In general, most of the relationships between student level predictors and institutional commitment were the same for both types of institution. (Contains 25 references, 5 tables, and 3 figures.) (SLD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

Predictors of Student Commitment at Two-Year and Four-Year Institutions

ED 458 854

L Strauss

U.S. DEPARTMENT OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Linda C. Strauss

Institutional Research Associate

J. Fredericks Volkwein

Director and Professor, Center for the Study of Higher Education

Penn State University

Footnote: This Paper was presented at the Annual Meeting of the Association for the Study of Higher Education, Richmond, VA, November 2001. The authors gratefully acknowledge the database building work contributed by two researchers in the State University of New York, Gary Blose and Kelli Parmley.

Please contact Linda Strauss at LUS2@psu.edu for more information/questions pertaining to the study.

BEST COPY AVAILABLE

Predictors of Student Commitment at Two-Year and Four-Year Institutions

Introduction and Need for the Study

The present research examines the predictors of institutional commitment of first year students at 28 two-year public and 23 four-year public institutions. Previous research has demonstrated that institutional commitment is a strong predictor of college students' intent to persist, and ultimately student persistence itself (Braxton, Milem, & Sullivan, 2000; Cabrera, Nora, & Castaneda, 1993; Nora, Kraemer, & Itzen, 1997; Sandler, 2000, Tinto, 1987, 1993). Since institutional commitment is a precursor or predictor of student persistence behavior, institutional commitment itself becomes an important object of study.

Institutional commitment has been defined in a number of ways. Included in these definitions are the student's overall impression, satisfaction, belonging, perception of quality, match with, and attraction to a particular institution (Bean, 1990; Braxton et al., 2000; Nora & Cabrera, 1993; Sandler, 2000; Tinto, 1987; Volkwein, Valle, Blose, & Zhou, 2000). For the purposes of this study, student commitment is defined as a student's overall satisfaction, sense of belonging, impression of educational quality, and willingness to attend the institution again.

There are five motivations driving the need for the current study. First, in discussing his "input-environment-output" (IEO) model, Astin notes the lack of empirical studies analyzing multi-campus data and the important contribution of structural/organizational influences on student outcomes (1977, 1984). Updating his model in 1984, Astin points out that while student characteristics serve as important inputs into the outcomes model, the campus environment also provides the context for the student's investment of psychological and physical energy in the learning process. He specifically identifies the lack of empirical studies analyzing multi-campus data and the important influence of structural/organizational influences on student outcomes.

Second, the link between institutional commitment and student persistence information plays an important role in the enrollment management and planning agenda for institutions of higher education. Both public and private institutions have budgets that are substantially enrollment driven. By forecasting and improving retention, an institution can determine and increase the amount of revenue available for planning initiatives. Thus, student commitment can serve as a valuable planning tool because it predicts subsequent student persistence behavior.

A comparison of student institutional commitment at two-year and four-year institutions has not been undertaken in any great depth. This is largely due to a lack of research in the two-year sector. While research on student commitment has been undertaken at many four-year institutions, a search of literature revealed only three studies focusing on institutional commitment at two-year institutions (Mutter, 1992; Nora, Kraemer, & Itzen, 1997; Pascarella, 1986). Cohen and Brawer (1996) cite the small amount of attention given to Community College research, including the "... scant handful of studies that include community college student data [that] are among the more than twenty five hundred reports cited by Pascarella & Terenzini in their ...volume, How College Affects Students (1991)".

As a fourth motivation for the study, the recent emphasis on student commitment and retention by accrediting agencies results in greater attention to policies and practices that improve student retention. A review of the guidelines and mission statements of both regional and specialized accrediting agencies reveals that student retention is an important component of their accreditation standards (McMurtrie, 2000).

The final motivation for the study is the increasingly common use of student retention as a performance indicator for state funding of higher education (Burke & Serban, 1998; Burke, 2000; Ewell, 1998). Hence, states that use student retention as a performance indicator can force institutions to assess and pay high priority to what happens to students. Institutions are driven by budgetary implications to maximize student retention.

This study is a modest attempt to close the gap in the research comparing two-year and four-year institutions. Our research focuses on the dynamics of student commitment as an important institutional outcome and predictor of student persistence. The present study attempts to identify the predictors of institutional commitment and determine the similarities and differences that exist between two-year institutions and four-year institutions.

Conceptual Frameworks

Higher education scholarship has produced an array of theories and models that explain the relationship between students and their colleges. Four perspectives pre-college characteristics, student-institution fit, campus climate, and organizational characteristics provide complementary theories about the influences on student outcomes. In order to capture a holistic perspective of student outcomes, and limit the conceptual framework for the study, two models are used as foundations for the current investigation: the Cabrera et al. (1993) Integrated Model of Student Persistence and the Pascarella (1985) General Causal Model. The current study draws heavily upon the elements in these two models that describe the interaction between students and their institutions.

The Cabrera model (Figure 1) proposes that institutional commitment is directly affected by academic integration and intellectual development, encouragement from significant others, financial aid, financial attitudes, and social integration. Additionally, the model proposes that pre-college academic performance and college grade point average have indirect effects on institutional commitment.

The Pascarella (1985) General Causal Model (Figure 2) specifies five elements as influencing student learning and cognitive development. These elements are structural/organizational characteristics of institutions, student background/pre-college traits (aptitude, personality, high school experiences), interactions with agents of socialization (faculty and student peers), institutional environment (tolerance, safety), and quality of student effort. There are few empirical studies using the Pascarella model as a conceptual framework, and the most rigorous of these found no direct effects and only trivial indirect effects between institutional characteristics and two academic outcomes (Franklin, 1995).

Thus, there are only a few models that have been put forward in the literature, and they have not been thoroughly tested. We do not know which organizational characteristics have the greatest influence on which outcomes, and under what conditions, and for what types of students. Also of interest to this study is Pascarella's call for multilevel analysis of student outcomes. He finds fault with exclusive use of either the institution or the individual as the single level of analysis. "One helpful direction for future research in this area would be to analyze data at both levels of aggregation (institution and individuals) whenever possible" (p. 51)

The combination of these two models adds to the uniqueness of this study. The combination of student pre-college characteristics, academic integration and academic growth, and encouragement from significant others, along with the inclusion of organizational characteristics adds a new dimension to the prediction of institutional commitment. The multi-institutional nature of the data, also provides a unique comparison of students in two-year institutions and students in four-year institutions, a comparison that has been largely ignored in the higher education literature.

Figure 1: Cabrera, Nora, and Castaneda (1993) Integrated Model of Student Persistence

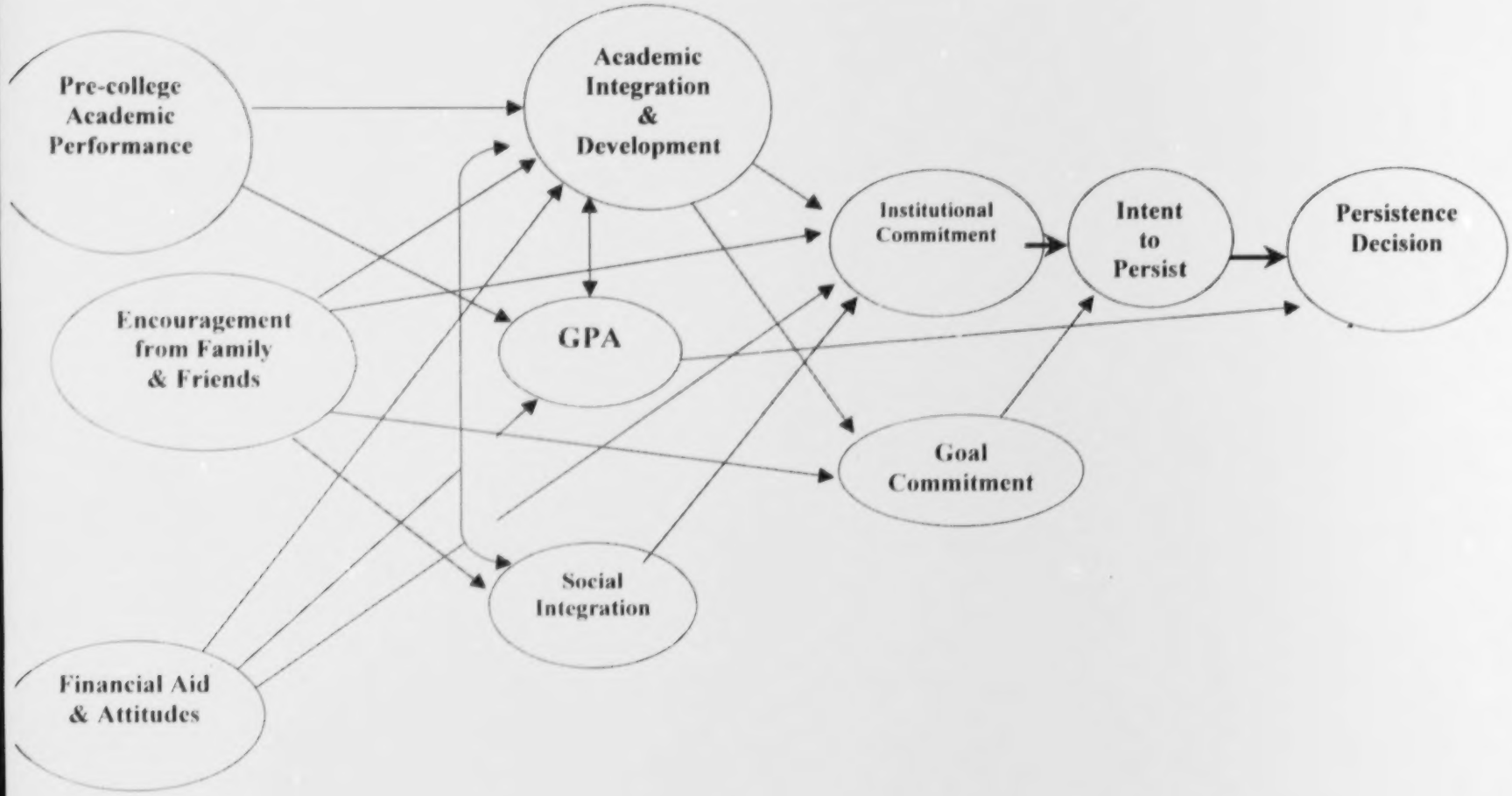
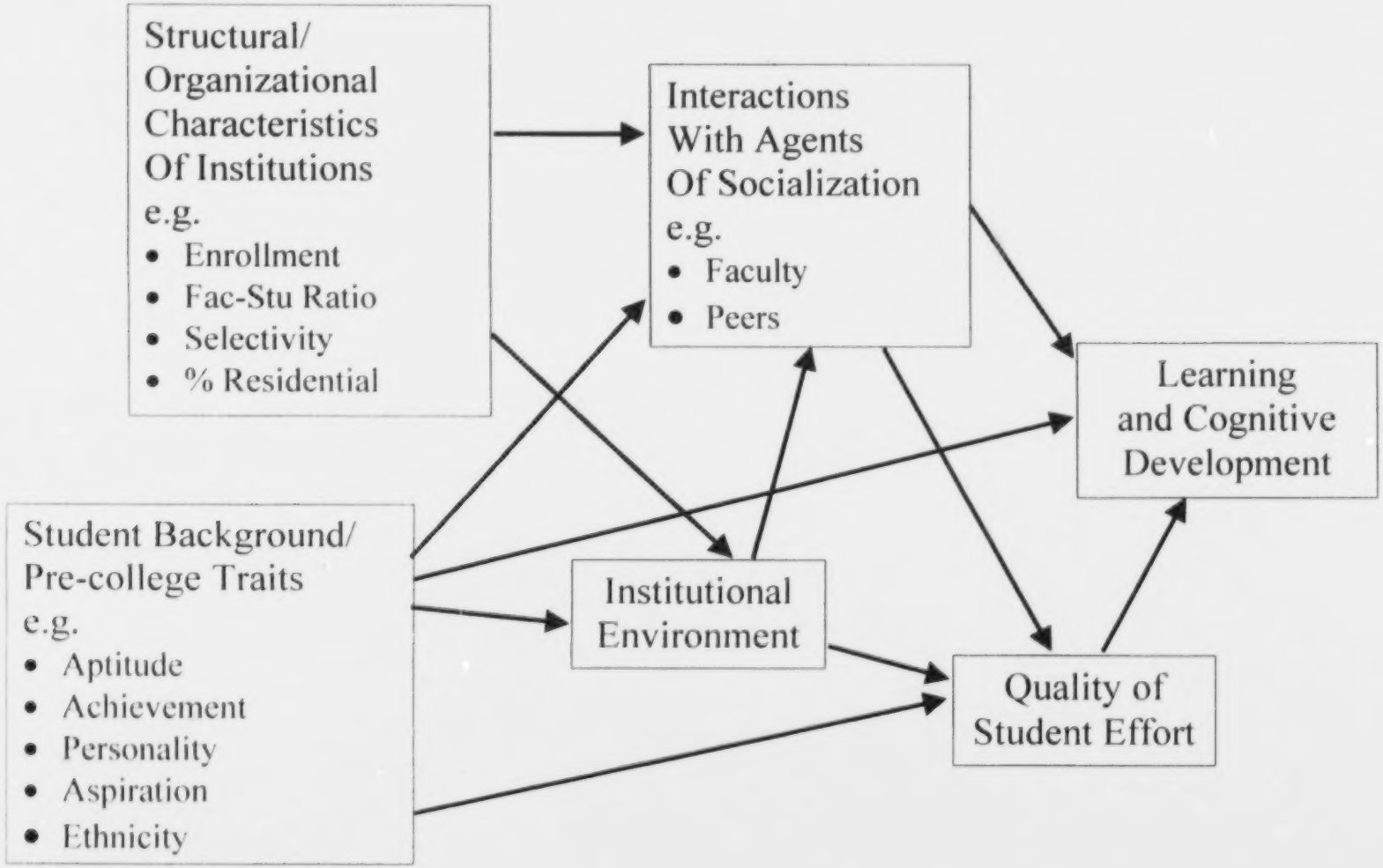


Figure 2: Pascarella (1985) General Causal Model



Research Methods

To examine the many potential influences on student institutional commitment, this study uses a cross-sectional research design, and draws upon a 1997 multi-campus database aggregated from 51 public institutions (23 four year and 28 two year). There are 8,217 student responses (2,499 from first-year students at four-year institutions and 5,718 first-year students at two-year institutions). We conducted multivariate analysis using Hierarchical Linear Modeling (HLM version 5.02).

Data Sources and Variable Summary

The current study is a secondary analysis of data collected by a consortium of participating institutions and the State University of New York System. The institutional data were gathered from multiple sources, all for the 1997-1998 academic year. The alpha reliabilities for the multi-item scales are recalculated for this population (see Table 1); all exceed .70 and the majority exceed .80, with the exception of Encouragement from significant others, a two item scale with an alpha of .60. The survey for the database was printed and scored by the American College Testing program. The student level variables were drawn from the survey instrument. Institutional level data was generated from the 1996-1997 Integrated Post-secondary Education Database System (IPEDS). The database is stored on and analyzed using SPSS pc version statistical software and HLM (version 5.02) statistical software.

Variables

The descriptive statistics in Table 1 displays the means and standard deviations for the variables used in the study.

Results

Unconditional Model and Intraclass Correlation

HLM enables us to examine the between-institution versus within-institutions effects. An unconditional model (a model with no level one or level 2 predictors, analogous to a one-way ANOVA) estimates that most of the variation in the outcome is at the student level, although a substantial and statistically significant portion ($p<.01$) exists between individual campuses (tau = .06). An intraclass correlation (Bryk & Raudenbush, 1992; Kennedy, Teddlie, & Stringfield, 1993; Singer, 1998). indicating the proportion of the total variance occurring between schools reveals that 10% of the total variance in institutional commitment is accounted for by institution-to-institution differences.

Limiting the Model

Due to the large number of predictors included in the study, the number of variables included in the HLM analysis needed to be reduced. A block entered OLS regression equation, having institutional commitment as the dependent variable, with list-wise deletion of cases for missing variables limited some variables. A plateau in the adjusted R^2 indicates the most parsimonious variable set with the 7th model, hence the variables in this model are retained (see Table 2). The variables and the betas for model seven are contained in Table 3.

The HLM Model

Next, we examine the significance of the level one variables in the final OLS model. Level one variables that significantly predicted institutional commitment at the $p<.05$ level are retained for the HLM analysis.

Failure to converge leads to another reduction. All of the variables in the HLM analysis that were not significant at the $p<.05$ level in this model were eliminated from the analyses.

Table 1
Table of Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation	Percent in cell	Cronbach's Alpha
Student Institutional Commitment	8240	1.00	5.00	3.6768	.775		.86
Size	8240	811	23429	6120.97	4805.77		
Four-Year Mission	8240	0	1	3.01	1.412	33.1%	
Two-Year Mission						66.9%	
Wealth	8240	7572.50	287343.41	13085.72	15790.02		
Productivity	8240	.14	.45	.2456	.041		
Complexity	8240	1.00	24.00	5.1968	3.430		
Age	8240	1	6	2.79	1.960		
Male	8240	1	2	1.55	.502	55.3%	
Female						44.7%	
Dependent Children	8240	1	5	1.31	.812		
Majority Group	8240	.00	1.00	.1191	.324	88.1%	
Underrepresented						11.9%	
Married	8240	.00	1.00	.1012	.302	10.1%	
Not Married						89.9%	
Separated	8240	.00	1.00	.0165	.127	1.7%	
Not Separated						98.3%	
Encouragement							.60
Support of Family	8240	1	5	3.85	1.223		
Support of Friends	8240	1	5	3.44	1.227		
Impact of Financial Aid	8240	2.00	8.00	4.3828	2.476		.84
Financial Attitudes	8240	1	5	3.03	1.340		
Social Growth	8240	1.00	5.00	3.4181	.921		.81
Social Integration	8240	1.00	5.00	3.4488	.698		.71
Interaction with Faculty Outside the Classroom	8240	1	5	2.57	1.216		
Faculty Interaction	8240	1.00	5.00	3.5697	.758		.79
Intellectual Growth	8240	1.00	5.00	3.5584	.794		.79
Classroom Experiences	8240	1.00	5.00	3.7190	.737		.86
College Cum. GPA	8240	.00	3.83	2.8219	.754		
Student Effort	8240	1.00	5.00	3.4948	.987		.79

Table 2
OLS Blocked Regression Model Summaries

Model Summary

Model	R	R Square	Adjusted R Square	Degrees of Freedom	Standard Error of the Estimate	F Statistic Probability
1	0.129172	0.016685	0.016088	5	0.76836	P <.001
2	0.2641	0.069749	0.068505	11	0.747613	P <.001
3	0.32815	0.107683	0.106273	13	0.7323	P <.001
4	0.339359	0.115164	0.113443	16	0.729357	P <.001
5	0.348866	0.121707	0.119891	17	0.726699	P <.001
6	0.574972	0.330593	0.329046	19	0.634502	P <.001
7	0.70141	0.491977	0.490554	23	0.552886	P <.001
8	0.702006	0.492812	0.49133	24	0.552465	P <.001
9	0.702834	0.493975	0.492435	25	0.551864	P <.001

Table 3
OLS Model 7 Summary

MODEL NUMBER 7 **ADJ R^2= .491**	Unstandardized Beta	Unstandardized Standard Error	Standardized Beta	T Statistic	Significance
(Constant)	-0.177695733	0.073522		-2.4169	0.016
Size	1.30488E-05	0.000002	0.080955378	6.81667	0.000
Mission	0.026662532	0.005990	0.048601785	4.45144	0.000
Wealth	-6.90562E-07	0.000000	-0.014076625	-1.6393	0.101
Productivity	1.002999332	0.187821	0.052553903	5.34019	0.000
Complexity	-0.007946404	0.003025	-0.035190252	-2.6267	0.009
Age	0.022653392	0.004264	0.057329611	5.31215	0.000
Gender	0.026483616	0.012435	0.017162765	2.12983	0.033
Number of Dependent Children	0.006213303	0.009927	0.006511641	0.62587	0.531
Self-report as a member of an underrepresented group	-0.108338077	0.019526	-0.045296706	-5.5485	0.000
Married	0.05521545	0.026582	0.021500477	2.07715	0.038
Separated	0.097392625	0.051112	0.016019828	1.90547	0.057
Support from Family	-0.011252806	0.005745	-0.017759519	-1.9585	0.050
Support from Friends	0.004208166	0.005738	0.006665112	0.73335	0.463
Impact of Financial Aid	0.01440191	0.002695	0.046033185	5.34348	0.000
Financial Attitudes	0.031675421	0.004629	0.054775458	6.84235	0.000
Social Growth	0.043404351	0.008874	0.051608755	4.89123	0.000
Social Integration	0.257299807	0.010734	0.231914938	23.971	0.000
Interaction with Faculty Outside the Classroom	0.002779899	0.005229	0.004363752	0.53159	0.595
Faculty Interaction	0.158897722	0.010025	0.155417164	15.8508	0.000
Intellectual Growth	0.171902175	0.010757	0.176157343	15.9807	0.000
Classroom Experiences	0.293887002	0.011734	0.279777628	25.0451	0.000

The final HLM model was produced and the betas and significance levels are shown in Table 4. Of particular interest is the impact of only one level two variable on any of the level one slopes. Institutional mission, as represented by affiliation as a two-year institution or a four-year institution, significantly affected the intercept and three of the level one slopes. None of the other level two variables significantly predicted the intercept nor any of the level one slopes. Thus, of the five organizational characteristics (mission, size, wealth, productivity, and complexity) only mission is a significant predictor in the final model.

Interpreting the Model

The model indicates that the intercept coefficient, 3.63 is significant at the $p<.01$ level. This information along with the coefficient for mission indicates that the value of student institutional commitment at the intercept for two-year institutions is .04 higher than the value for student institutional commitment for four-year institutions. The intercept value for two-year institutions is 3.67, and for four-year institutions is 3.63.

One way of measuring the impact of mission on institutional commitment is to compute how much the variance between institutions (tau) has changed between the unconditional model and the final model (Bryk & Raudenbush, 1992; Singer, 1998). This is computed by using the formula tau (unconditional) – tau (final model) / tau (unconditional) or [(.06-.01)/.06 = .83] indicating that 83% of the variance between institutions' institutional commitment scores is explained by the student level variables.

Structural/Organizational Characteristics

Because mission is significant, the HLM equation can be re-written into a pair of fitted models, one for each sector, substituting the values for the two-year and four-year institutions (Singer, 1998). These equations are contained in Table 6. A plot of the 25th, 50th, and 75th percentile values for each of the student variables was calculated, and then inserted into the two regression equations, to produce fitted values for institutional commitment for both the two-year and four-year institutions is shown in Figure 3.

Pre-College Characteristics

Three pre-college characteristics -- age, member of an underrepresented group, and being married -- are retained in the final model.

Student age is a significant predictor of institutional commitment. The slope for age is .03, significant at the $p<.05$ level. This relationship is positive, indicating that the older the student, the higher the institutional commitment score.

The average slope representing the relationship between identifying as a member of an underrepresented group and institutional commitment is -.08 ($p < .01$). This indicates that students who do not identify as a member of an underrepresented group tend to have higher institutional commitment scores.

The average slope representing the relationship between being married and institutional commitment is .06 ($p < .01$). Hence, students who report being married have higher institutional scores than students who are not married.

Financial Aid and Attitudes

The average slope representing the relationship between student attitudes about financing a college education and institutional commitment is .03, ($p < .01$). Students who perceive greater difficulty financing their education generally report higher institutional commitment scores. The impact of financial aid is another student level independent variable that predicts institutional commitment. The slope for the impact of financial aid is .02 ($p<.05$) Therefore, students reporting financial aid in the form of Federal and State grants also tend to report higher institutional commitment scores.

Social Integration and Social Growth

Scales representing social integration and social growth are included in the final model. The average slope representing social growth and institutional commitment is .05 ($p<.001$). Students reporting greater social growth since the beginning of their college experience, also report greater institutional commitment scores.

The impact of social integration on commitment is one of the strongest in the study. Moreover, the social integration slope differs between two-year and four-year institutions. The two-year institutions' social integration slope is .04 lower (B=.27) than that of four-year institutions (B=.31). Thus, the social integration measure is an even stronger predictor of institutional commitment for students at four-year institutions than for students at two-year institutions.

Academic Integration and Academic Growth

Three of the five scales reflecting academic integration and academic growth are included in the final model. These are faculty interaction, intellectual growth, and classroom experiences. The average slopes representing the relationship between student perceptions of faculty interaction and intellectual growth and institutional commitment are .16 and .17 ($p<.001$). Students who report greater levels of interaction with faculty or greater intellectual growth, also report greater institutional commitment scores.

The impact of classroom experiences on commitment is the strongest in the study. Moreover, the relationship between classroom experiences and commitment varies according to institutional mission. The classroom experience slope at two-year institutions is .02 higher than the classroom experience at four-year institutions. Hence, the classroom experience tends to be a better predictor of institutional commitment at two-year institutions than at four-year institutions.

Table 4
HLM Results: Final Model

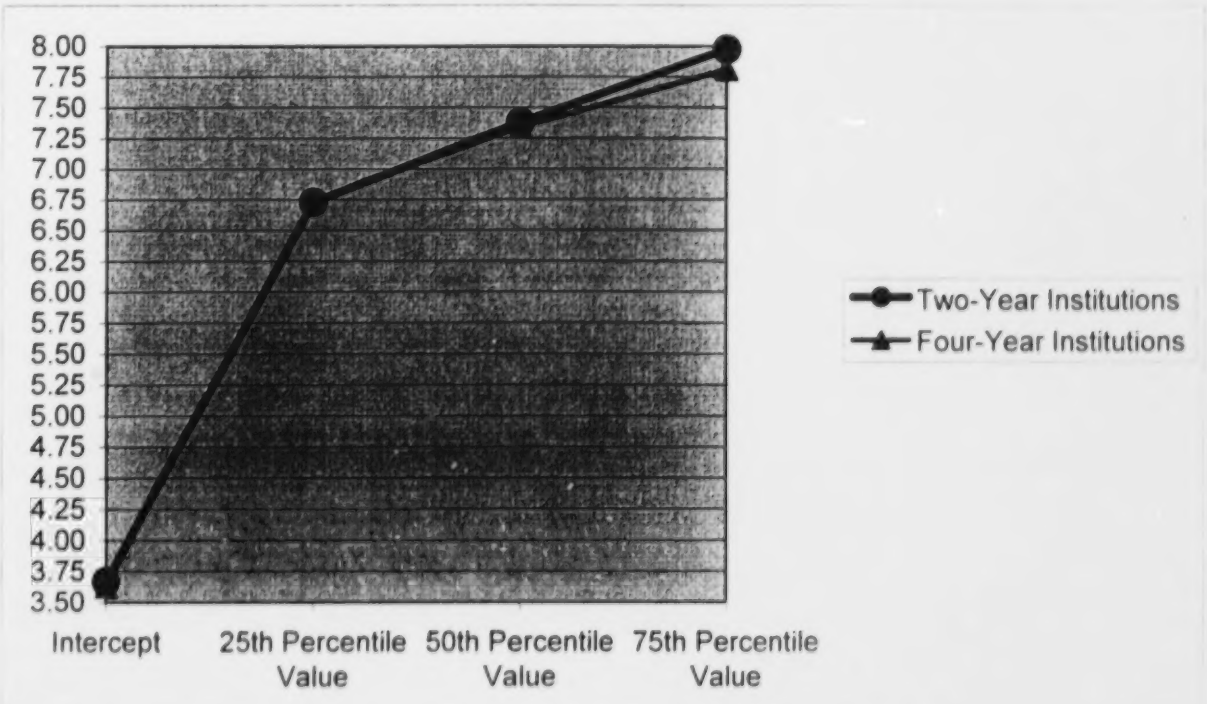
Fixed Effect	Coefficient	Standard Error	T-ratio	d.f.	P-value
Intercept for Institutional Commitment, B0					
Intercept, G00	.631751	0.018676	194.458	46	0.000
Mission, G01	.044803	0.010053	4.457	46	0.000
Age Slope, B1					
Intercept, G10	.025047	0.004741	5.283	47	0.000
Financial Attitudes, B2					
Intercept, G20	.030076	0.004978	6.042	47	0.000
Faculty Interaction, B3					
Intercept, G30	.156943	0.009812	15.995	47	0.000
Underrepresented Group, B4					
Intercept, G40	-082642	0.021430	-3.856	47	0.001
Married Slope, B5					
Intercept, G50	.056377	0.019774	2.851	47	0.007
Intellectual Growth Slope, B6					
Intercept, G60	.169535	0.011206	15.129	47	0.000
Classroom Experiences Slope, B7					
Intercept, G70	.275243	0.014323	19.217	46	0.000
Mission, G71	.015720	0.006505	2.417	46	0.020
Social Growth Slope, B8					
Intercept, G80	.051326	0.010419	4.926	47	0.000
Social Integration, B9					
Intercept, G90	.269224	0.014931	18.031	46	0.000
Mission, G91	-043554	0.009344	-4.661	46	0.000
Impact of Financial Aid, B10					
Intercept, G100	.015214	0.003238	4.698	47	0.000

Random Effect	Standard Deviation	Variance Component	d.f.	Chi-square	P-value
Intercept for Institutional CommitmentU0	0.11200	0.01254	36	185.75467	0.000
Age, U1	0.02285	0.00052	37	50.68442	0.066
Financial Attitudes, U2	0.01705	0.00029	37	47.18452	0.122
Faculty Interaction, U3	0.03232	0.00104	37	39.00365	0.380
Underrepresented Group, U4	0.07396	0.00547	37	50.04358	0.074
Married, U5	0.04698	0.00221	37	37.70488	0.437
Intellectual Growth, U6	0.04556	0.00208	37	50.48962	0.069
Classroom Experiences, U7	0.04683	0.00219	36	50.42858	0.056
Social Growth, U8	0.04954	0.00245	37	44.46500	0.186
Social Integration, U9	0.06413	0.00411	36	52.55640	0.037
Impact of Financial Aid, U10	0.01408	0.00020	37	62.14136	0.006
Level One Variance, R	0.53481	0.28602			

Table 5
HLM Standardized Equations for Direct Effects of Two-Year and Four-Year Sectors

	Two-Year Equation	Four-Year Equation
Intercept	3.67	3.63
Classroom Experiences	+.30	+.28
Intellectual Growth	+.17	+.17
Faculty Interaction	+.16	+.16
Social Integration	+.27	+.31
Social Growth	+.05	+.05
Underrepresented Group	-.08	-.08
Married	+.06	+.06
Age	+.03	+.03
Financial Attitudes	+.03	+.03
Impact of Financial Aid	+.02	+.02

Figure 3.
Regression Lines for Two-Year versus Four-Year Institutions



Conclusion

In response to the research questions posed at the beginning of the study, the analyses reveal several important findings.

What factors influence student institutional commitment at two-year public and four-year public institutions?

From the HLM analyses, multiple student level variables influence institutional commitment. The most important are the measures of academic integration, followed by the measures of social integration. Many of the direct effects identified in the Cabrera model are significant in this study. Specifically, academic growth and development, financial attitudes, and financial aid are significant predictors of student institutional commitment. Social integration and social growth also contribute strongly and significantly to the prediction of student institutional commitment. Additionally, several of the indirect effects in the Cabrera model also significantly predict institutional commitment. Pre-college characteristics of age, ethnicity, and marital status are all significant predictors of commitment.

Of particular interest to this study is the role of two-year versus four-year mission in predicting institutional commitment. Controlling for all other variables, students at two-year institutions have a slightly higher institutional commitment score than students at four-year institutions. Additionally, mission interacts with social integration, and classroom experiences differently. The results merit further investigation of organizational characteristics in predicting not only institutional commitment, but persistence as well.

Are certain factors similar between two-year public and four-year public institutions?

The HLM analyses reveal that most of the relationships between student level predictors and institutional commitment are the same between the two types of institutions. Pre-college characteristics, including age, ethnicity, and being married, along with the perceived difficulty financing a college education, the impact of financial aid, the amount of faculty interaction, intellectual growth, and social growth maintain the same relationship with institutional commitment scores, regardless of the institutional type.

Are certain factors different between two-year public and four-year public institutions?

Controlling for all other variables, first year students at two-year institutions have a slightly higher institutional commitment score than first year students at four-year institutions. Although classroom experiences and social integration both significantly predict institutional commitment scores at two-year and four-year institutions, there are differential impacts. Specifically, the classroom experience is a more influential predictor at two-year institutions, while social integration has more impact on institutional commitment scores for students at four-year institutions.

The results of this study support the hypothesis that two-year and four-year institutions have different institutional commitment values. However, while these results are statistically significant, the sizes of the differences are actually quite small. The results suggest the need to further explore the differences between two-year and four-year institutions.

Implications

Two-Year and Four-Year Institutions

The differential findings for two-year versus four-year institutions may have more theoretical than practical significance. While the difference of .02 between the two slopes is statistically significant, it is not large enough to be administratively meaningful. However, the results are consistent with the structure of two-year versus four-year institutions. Because the two-year institutions in this study are not residential, students primarily commute to their classes and hence probably spend less time in school-related out-of-class activities. Thus, we find that the classroom experience appears to be more critical for two-year students. This finding is also consistent with Tinto's argument (1997) that classroom experiences are the basis for forming a supportive community environment at a community college.

In contrast, the four-year institutions in the study provide residence facilities for substantial proportions of their students. These students have greater opportunities to spend more out of class time on campus than two-year students, and apparently develop commitment to the institutions through social integration, as well as academic. Thus, we find a stronger relationship between social integration and institutional commitment for students at four-year institutions.

Retention

This study finds a strong association between student level variables and institutional commitment identified in the Cabrera et al., Integrated Model of Student Persistence (1993). As previously noted, other studies indicate a strong link between institutional commitment and persistence (Cabrera et al., 1993, 1999; Nora & Cabrera, 1993). If the relationship between institutional commitment and persistence found in these other studies applies to the population of students in this study, we have gained an important tool for predicting persistence as a result of this investigation. Ideally, the data in our investigation would have included persistence measures, but due to the cross-sectional nature of this research design, this was not possible.

Two-year and four-year institutions alike should differentially focus their energies on those aspects of the student experience that are most strongly associated with influencing student commitment at their respective institutions. In particular, the measures of student integration, social as well as academic, are especially powerful predictors of student commitment, and thus persistence. Also influential are age, ethnicity, marital status, and financial aid. Enrollment driven campuses may want to adopt appropriate programs and policies that take these findings into account.

Performance Indicators and Accreditation

The accreditation and accountability literature suggests that differences in mission and institutional finances have important consequences for students. Our study finds scant support for such views. Indeed, this one student outcome appears to be the product of a diverse but rather uniform set of student traits and experiences across the 51 campuses in this study. The differences we find in the commitment of two-year and four-year students are statistically significant, due to the large sample size, but small in magnitude.

Regional and specialized accrediting agencies alike are focusing on student outcomes in general, and on student retention in particular, as an important component of their accreditation standards. As noted above, the link between student commitment and retention is fairly well

established. Our findings imply that the influences on student retention are rather common across the varied range of institutions in this study.

Moreover, states are beginning to use student persistence and graduation rates as performance indicators for both accountability and budgeting. In fact, Burke (2000) reports that graduation rates are the most frequent indicator used by all states combined. However, there is opposition to performance indicators in some quarters precisely because they fail to adequately consider important differences in campus mission. The similarity of predictors for student commitment that we find in our study may raise a question about the need to select indicators that vary by institution type.

Even so, we are not prepared to recommend uniform accreditation standards and state performance measures based on this one study. However, we do believe that the remedies for low student persistence and poor student commitment are rather similar from campus to campus. At the very least, these results give campus managers a suggested agenda for improving those performance measures that align with student commitment -- improving student academic integration and academic growth, as well as student social integration and social growth. Moreover, the levers for improving these student experiences appear to be within administrative and faculty control, and not significantly driven by organizational characteristics.

References

Astin, A. W. (1977). Four Critical Years: Effects of College Beliefs, Attitudes, and Knowledge. San Francisco: Jossey-Bass.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 24(5), 207-308.

Bean, J. P. (1990). Why students leave: Insights from research. In D. Hossler (Ed.). New Directions for Higher Education, No. 53. Managing College Enrollments (147-169). San Francisco: Jossey-Bass.

Braxton, J. M., Milem, J. F., & Sullivan, A. S. (2000). The influence of active learning on the college student departure process. Journal of Higher Education, 71(5), 569-590.

Bryk, A. S. & Raudenbush, S. W. (1992). Hierarchical Linear Models: Applications and Data Analysis Methods. Newbury Park, California: Sage.

Burke, J. C. (2000). Performance Funding: Popularity and Volatility. Paper presented at the National Association for Institutional Research Forum, Cincinnati, Ohio.

Burke, J. C. & Serban, A. M. (1998). Performance funding for public higher education: Fad or trend? New Directions for Institutional Research, 47.

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). The role of finances in the persistence process: A structural model. Research in Higher Education, 33(5), 571-593.

Cohen, A. M. & Brawer, F. B. (1996). The American Community College. San Francisco: Jossey-Bass.

Ewell, P. T. (1998). National trends in assessing student learning. Journal of Engineering Education, 87(2), 107-103.

Franklin, M. (1995). The effects of differential college environments on academic learning and student perceptions of cognitive development. Research in Higher Education, 36(2), 127-154.

Kennedy, E., Teddlie, C., & Stringfield, S. (1993). Multilevel Analysis of Phase II of The Louisiana School Effectiveness Study. Paper presented at the annual meeting of the International Congress for School Effectiveness and Improvement. Norrkoping, Sweden.

McMurtrie, B. (2000). Accreditors revamp policies to stress student learning. The Chronicle of Higher Education, A29-A31.

Mutter, P. (1992). Tinto's theory of institutional departure. Journal of College Student Development, 33(4), 310-318.

Nora, A. & Cabrera, A. F. (1993). The construct validity of institutional commitment: A confirmatory factor analysis. Research in Higher Education, 34(2), 243-262.

Nora, A. Kraemer, B. & Itzen, R. (1997). Persistence amount non-traditional Hispanic college students: A causal model. Paper presented at the 22nd annual meeting of the Association for the Study of Higher Education. Albuquerque, NM. (ED 415824).

Nora, A. & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. Journal of Higher Education, 67, 119-148.

Pascarella, E. (1985). College environmental influences on learning and cognitive development: A critical review and synthesis. In J. Smart (Ed.), Higher Education: Handbook of Theory and Research, 1, New York: Agathon.

Pascarella, E. (1986). Long-term persistence of two-year college students. Paper presented at the annual meeting of the Association for the Study of Higher Education. San Antonio, TX. (ED 268900).

Pascarella, E. T. & Terenzini, P. T. (1991). How College Affects Students. San Francisco: Jossey-Bass.

Sandler, M. E. (2000). Career decision-making self-efficacy, perceived stress, and an integrated model of student persistence: A structural model of finances, attitudes, behavior and career development. Research in Higher Education, 41(5), 537-580.

Singer, J. D. (1998). Using SAS PROC MIXED to fit multilevel models, hierarchical models, and individual growth models. Journal of Educational and Behavioral Statistics, 24(4), 323-355.

Tinto, V. (1987). Leaving College: Rethinking the Causes and Cures of Student Attrition. Chicago: University of Chicago Press.

Tinto, V. (1993). Leaving College: Rethinking the Causes and Cures of Student Attrition (2nd Edition). Chicago: The University of Chicago Press.

Volkwein, J. F., Valle, S., Blose, G. & Zhou, Y. (2000). A Multi-Campus Study of Academic Performance and Cognitive Growth among Native Freshman, Two-year Transfers, and Four-year Transfers. Paper presented at the meeting of the Association for Institutional Research Forum, Cincinnati, OH.